

ABSTRACT

An electromagnetic rotary actuator is driven by a single-phase voltage. Permanent magnets on a rotor interact over a part-cylindrical small airgap with a soft-iron stator having pole teeth that carry at least one winding for rotating the rotor within a limited angular range, the airgap having a high flux density. The windings are applied around those of the pole teeth that are centrally located. The permanent magnets and stator poles have the same angular pitch. The actuator is compact having a low total length and has a high output power/loss ratio and allows a fast response. It can be built with a low thermal resistance to an enclosure or casing by having the coils being in direct mechanical contact therewith.